Appl. No. 10/613,514
Amdt. dated December 2, 2003
Preliminary Amendment

PATENT

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REMARKS/ARGUMENTS

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Prior to a first action, please amend the above-identified application by cancelling claims 2-9 and entering new claims 10-35. Following this amendment, claims 1 and 10-35 will be pending.

Claims of similar scope to claims 1 and 10-35 were withdrawn in a parent application. In that parent application, the withdrawn claims were subject to rejection under 35 USC §112, ¶1 as being of undue breadth (roughly corresponding to claims 33-35 in the present amendment) and under 35 USC §102(e) as being anticipated by Lee (U.S. Patent No. 6,026,182 issued to Lee, et al.; hereinafter "Lee") (roughly corresponding to claims 1 and 10-32). For at least the reasons stated herein, Applicant believes that the pending claims are all allowable and respectfully requests allowance of the pending claims. In particular, Applicant submits the following reasons for allowability of the independent claims over Lee and that the claims dependent from those independent claims are also allowable for at least those reasons.

The Lee Reference

Lee shows a segmentation encoding the system, wherein images are encoded by segmenting an image and applying masks to each of the segments so that each segment is coded separately. Lee's encoder process compresses video information relative to objects of arbitrary configurations, rather than fixed, regular arrays of pixels. *See*, Lee at col. 7, l. 66 to col. 8, l. 1. Fig. 4 of Lee describes a process wherein segmentation of an image can be assisted by a user forming rough outlines of objects in a key frame and those rough outlines being further processed to defined object parameters. Object contours are conveyed as part of encoded data and chain encoding is used for encoding the contours of objects to be included in the encoded video sequence to identify to the decoder the boundaries of encoded objects. *See*, Lee at col. 29, l. 38 to col. 30, l. 15.

Claim 1

Claim 1 is allowable over Lee, as Lee fails to disclose or suggest each step of claim 1. For example, Lee fails to disclose transmitting kinetic information to a decoder for use in reconstructing a second video frame based on the decoder's generation of structural information

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of a first video frame. Lee does not appear to disclose or suggest any generation of structural information at the decoder. In fact, it would appear that at least Fig. 4 of Lee, and step 146 in particular, teaches away from generating any structural information at the decoder, as the segmentation process 140 shown there involves user input at least for rough outlines of objects. Fig. 26 of Lee was cited as teaching reconstructing a second video frame from a first video frame, but that figure does not appear to relate to reconstructing based on the decoder's generation of structural information.

Presumably, if an encoder used user input to segment an image, the decoder would need to either have that user input available or have the resulting segmentation that was performed by the encoder. Nothing in Lee suggests that the user inputs of rough outlines are conveyed to the decoder, so Lee's decoder can only rely on the segmentation generated by the encoder and thus needs to receive all of the segmentation information from the encoder and the decoder would not be able to generate a segmentation, instead having to rely on the encoder segmentation. Since Lee does not claimed reconstructing, claim 1 is allowable over Lee.

Claim 10

Claim 10 is allowable over Lee as Lee fails to disclose or suggest each element of claim 10. But one example is the claimed element in claim 10 of a decoder comprising a segmenter that generates a segmentation of at least the first reconstructed frame. Lee does not appear to disclose or suggest a decoder having a segmenter.

As clearly shown in Lee's Fig. 23A, the data used for decoding includes masks 66, feature points 68, transform coefficients 104 and compressed error data 116. Nowhere in Fig. 23A does Lee disclose or suggest a decoder comprising a segmenter or any element that generates a segmentation. Therefore, claim 10 is allowable over Lee.

Claim 12

Claim 12 is allowable over Lee as Lee fails to disclose or suggest each element of claim 12. For example, elements of claim 12 not disclosed or suggested by Lee include logic to determine a first reconstructed frame and a segmenter that generates a segmentation of at least the first reconstructed frame. The segmentation aspects of Lee do not appear to concern

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constructed frames at an encoder, as original frames are segmented at the encoder and the segmentation results are conveyed to the decoder in the form of masks 66. Since there is no need in Lee's system to segment at the decoder, there would be no need to consider segmentation of a reconstructed frame.

In view of the above, Applicant submits that claim 12 is allowable over Lee.

Claim 14

While each of claims 13-17 dependent from claim 12 are allowable at least for the reasons for allowability of claim 12, many of those dependent claims include additional limitations further distinguishing from the cited references. For example, claim 14 depends from claim 12 and recites a difference information generator configured to encode a difference derived from an adaptive transform with respect to basis functions where the basis is determined by the segmentation of a reconstructed frame.

Claim 18

Claim 18 is allowable over Lee as Lee fails to disclose or suggest each element of claim 18. For example, claim 18 is directed to a decoder and the decoder comprises a segmenter that generates a segmentation of at least a first reconstructed frame. As indicated above, Lee does not appear to disclose or suggest any segmentation performed at or by a decoder. Therefore, claim 18 is allowable over the cited references.

Claim 22

Claim 22 is allowable over Lee as Lee fails to disclose or suggest each step of claim 22. For example, claim 22 recites a method of encoding information comprising generating encoded video information that is such that a second frame is reconstructable by a decoder from encoded video information based on segmentation information generated by the decoder for a first reconstructed frame. Such a step is not disclosed or suggested by Lee.

Claim 28

Claim 28 is also allowable over Lee, as Lee fails to disclose or suggest each step of claim 28. For example, Lee fails to disclose or suggest computing segmentation information about a

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key frame from a reconstructed key frame or reconstructing an intermediate frame from an encoded intermediate frame using at least some difference information and at least some of the segmentation information. For at least the above reasons, Applicant submits that claim 28 is patentable over Lee.

Claim 33

In the parent application, a claim similar to claim 33 was rejected as having undue breadth. Applicant submits that claim 33 is not of undue breadth as it simply recites a novel signal embodied in a carrier wave which is fully supported by the original disclosure.

Claim 35

In the parent application, a claim similar to claim 35 was rejected as having undue breadth. Applicant submits that claim 35 is not of undue breadth as it simply recites a novel signal embodied in a carrier wave which is fully supported by the original disclosure.
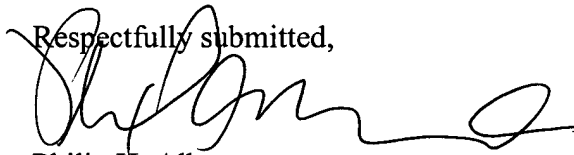
CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,

Dated: 12/2/03

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